

ABSTRACT

The present invention is a chemical reactor and method for catalytic
5 chemical reactions having gas phase reactants. The chemical reactor has reactor
microchannels for flow of at least one reactant and at least one product, and a
catalyst material wherein the at least one reactant contacts the catalyst material
and reacts to form the at least one product. The improvement, according to the
present invention is: the catalyst material is on a porous material having a
10 porosity that resists bulk flow therethrough and permits molecular diffusion
therein. The porous material further has a length, a width and a thickness, the
porous material defining at least a portion of one wall of a bulk flow path through
which the at least one reactant passes.

15

60780*475460